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## THE ECONOMIC VALUE OF THE LEOPARD FROG.

The economic value of the Toad, Bufo americanus, is well attested and generally recognized, but in economic zoology, for instance in estimating the beneficial or injurious nature of the animals taken as food by birds, the economic relation of frogs is usually considered as neutral. The nature of the stomach contents of twenty-five specimens of Rana pipiens, which were collected on the golf links at Kingston by Mr. H. C. White and examined by the writer, would, however, seem to indicate that though this species may be neutral when in an aquatic habitat it is decidedly beneficial when it is in the fields and meadows.

As may be seen from the list which follows, injurious insects predominated in the food of these specimens, the only beneficial animals found therein being spiders, Carabid beetles and a dragon-fly, while the numbers of Red-legged Locusts, *Melanoplus femur-rubrum* and Potato Beetles, *Leptinotarsa 10-lineata*, consumed are rather surprising.

Specimen No. 1. Melanoplus femur-rubrum, 5; Gryllus assimilis (Large Cricket) 1; Miranda aurantia (Spider) 1; Agalena naevia (Spider) 2; Mamestra assimilis (Cutworm) 3; Winged Aphid, 1.

No. 2. Melanoplus femur-rubrum, 5; Leptinotarsa 10-lineata, 2; Nemobius fasciatus (Small Cricket) 1; Gryllus assimilis, 1; Pardosa sp? (Spider) 1; Lepidopterous pupae, 2.

No. 3. M. femur-rubrum, 5; L. 10-lineata, 10;

Mamestra assimilis, 3; Spiders, 2.

No. 4. L. 10-lineata, 1; Carabidae, 2; Nemobius fasciatus, 1.

No. 5. M. femur-rubrum, 7; L. 10-lineata, 1; Sympetrum rubicundulum (Dragon-fly), 1; Pardosa sp?, 1.

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No. 6. M. femur-rubrum, 5; Ipidae (Bark Beetle) 1; Wasp, 1.

No. 7. M. femur-rubrum, 1; L. 10-lineata, 6.

No. 8. M. femur-rubrum, 2; L. 10-lineata, 1.

No. 9. L. 10-lineata, 2; Gryllus assimilis, 1; Nemobius fasciatus, 2.

No. 10. M. femur-rubrum, 3; L. 10-lineata, 1.

No. 11. M. femur-rubrum, 1; L. 10-lineata, 2.

No. 12. M. femur-rubrum, 5.

No. 13. M. femur-rubrum, 4; Dendroctonus sp? (Bark Beetle) 1.

No. 14. M. femur-rubrum, 5; L. 10-lineata, 1.

No. 15. M. femur-rubrum, 3; L. 10-lineata, 1.

No. 16. M. femur-rubrum, 4.

No. 17. M. femur-rubrum, 5; L. 10-lineata, 2.

No. 18. Gryllus assimilis, 1; L. 10-lineata, 1; Agalena naevia, 2.

No. 19. M. femur-rubrum, 5.

No. 20. M. femur-rubrum, 8; L. 10-lineata, 1; Harpalus caliginosus (Ground Beetle), 1.

No. 21. M. femur-rubrum, 2; L. 10-lineata, 1.

No. 22. M. femur-rubrum. 3.

No. 23. M. femur-rubrum, 3; Mamestra assimilis larva (Cutworm) 1; Gryllus assimilis, 1; Euschistus variolarius (Bug) 1; Pentotomid nymph, 1.

No. 24. L. 10-lineata, 4.

No. 25. M. femur-rubrum, 3; Mamestra assimilis (Cutworm) 3; Agalena naevia, 1.

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## EGG-LAYING BY THE "HORNED TOAD", PHRYNOSOMA CORNUTUM.

According to Gadow (Cambridge Natural History, p. 533 of vol. Amphibia and Reptiles) all the species of *Phrynosoma* or Horned Lizards are viviparous, in which they differ from nearly all of